Department of LABOR AND INDUSTRIES

ELECTRICAL CURRENTS

Code guidance from the Department of Labor and Industries
Office of the Chief Electrical Inspector

Janet Lewis, Chief Electrical Inspector **Vol. 1 No. 6** **June 1998**

Our 6th month! Electrical code issues and answers.

● Temporary outdoor stage or concert productions

Production companies in the business of providing temporary portable electrical distribution equipment to power outdoor productions of concerts, stage shows, and similar shows are allowed to purchase electrical work permits for outdoor temporary installations of electrical generators and portable electrical distribution equipment and conductors that they own or exclusively control (lease, or rent). Qualified, regularly employed employees of the firm must do installations of this equipment. Electrical inspection and approval is required before the event opens.

The department will consider the portable temporary equipment owned by these firms as their "place of business" or "business property," as we have similarly considered carnivals and amusement rides in past practice. The electrical work permit fees will be calculated per WAC 296-46-910(3)-TEMPORARY SERVICES.

Temporary electrical installations in buildings or permanent structures, and the connection of temporary outdoor portable electrical distribution equipment to permanent wiring, must be done by properly certified electricians and licensed electrical contractors or by the real property owners exempted in RCW 19.28.610. An electrical work permit is required from each entity responsible for their portion of the electrical work.

● Amusement Ride Inspections

Amusement ride companies are required to have each amusement ride or structure inspected for mechanical safety at least once annually by an insurer or a person with whom the insurer has contracted. Each ride or structure must also have an annual electrical inspection performed by the Department of Labor and Industries. Additionally, the electrical inspector shall monitor at each location where an amusement ride or structure is set up for operation, that the Operating Permit (safety) decal and a carnival electrical inspection decal have been obtained and that the ride description, model number and serial number are properly identified.

Prior to each electrical inspection the inspector will contact Valerie Valencia at (360) 902-6278 and obtain a list of the current rides registered with the department. If there are any changes or additions to this list of rides they should be noted. The inspector will, after completing each electrical inspection fax a copy of the list along with any correction reports to Ms. Valencia at FAX (360) 902-5296.

Upon completion of the first electrical inspection of the season for each ride or structure the electrical inspector will place a carnival electrical inspection decal at the ride or structure disconnecting means, at each distribution panel (splitter box), and at each generator to indicate that the initial inspection was made for that calendar year.

The electrical inspector will inspect the electrical power generation and distribution system for compliance with the National Electrical Code each time the ride or structure is set up for operation. A standard approval sticker will be posted at each generator or other power source.

● Use of “J” type Cam Loc connectors for carnivals and stage shows

Listed, locking type, single-pole portable cable connectors, such as “J” type Cam-Lok connectors, are now permitted to be used on single conductor cables in sizes #2 and larger. The use of these connectors must comply with at least one of the following: 1) The connectors are interlocked so that it is not possible to connect or disconnect conductors while energized, 2) The line connectors are of the listed sequential-interlocking type or, 3) A caution notice shall be adjacent to the connectors showing the proper connection and disconnection sequence. Additional requirements for these connections are in WAC 296-46-360 & 365, NEC 520-53(k), NEC 525-15(d), and NEC 530-22.

● New Nonresidential lighting maintenance and lighting retrofit specialty category

What is the new specialty? A new specialty category for an electrical contractor license, administrator certificate in WAC 296-46-930 and a technician certificate in WAC 296-401-140 is created and becomes effective June 30, 1998.

What does it cover? This specialty limits the holder to working within the housing of existing nonresidential lighting fixtures for work related to repair, service, and maintenance of lighting fixtures, and the installation of energy efficient lighting retrofit upgrades. The holder is not allowed to install new fixtures or branch circuits, to relocate existing fixtures, or to alter existing branch circuits.

How do I qualify for the technician certificate? A one-year window exists for people with prior experience to apply to take the specialty examination. Prior to June 30, 1999, you may be eligible to take the technician examination by submitting a signed and notarized letter from an employer(s) verifying that you "performed electrical lighting maintenance and lighting retrofit installations and were employed for a minimum of two years by a contractor engaged full-time in the business of nonresidential lighting maintenance and lighting retrofit work."

An employer who verifies work experience for an employee must show proof that the employer was a registered contractor under RCW 18.27 or proof of a business license issued by the department of Licensing for the time period of experience certified.

After submittal and verification of a department application, letter of experience, and payment of the appropriate fee, individuals will be allowed to take the examination. A certificate will be issued after an applicant passes the examination. All individuals that submit applications prior to June 30, 1999 and qualify to take the examination will remain qualified after that date.

After June 30, 1999, all applicants must show at least two years (4000 hours) of experience as a certified trainee performing work in this category under the direct supervision of a journeyman, nonresidential maintenance, or lighting specialty electrician. This specialty as well as all journeymen and other specialty electricians must complete the required continuing education courses prior to renewal of their certificates.

How do I obtain this new specialty administrator certificate? You must complete the department's application to take the specialty administrator examination based on the scope of work, pay the proper fee, and pass the examination.

How do I obtain this new specialty electrical contractor license? A detailed explanation for obtaining a contractor license is provided in RCW 19.28.120. A specialty contractor must employ a full-time specialty administrator prior to being issued an electrical contractor license.

For further information about this specialty or any other certificates and licenses please contact Phyllis Cooper at (360) 902-5252 or write to the Electrical Licensing and Certification Section at PO Box 44460, Olympia, WA 98504-4460.

● White conductor in Type NM cable must be re-identified when used as ungrounded (hot) conductor

NEC 310-12(c) states: *Conductors that are intended for use as ungrounded* (hot) *conductors, whether used as single conductors or in multiconductor cables, shall be finished to be clearly distinguishable from grounded and grounding conductors. Ungrounded conductors shall be distinguished by colors other than white, natural gray, or green; or by a combination of color plus distinguishing markings.* The exception refers to NEC 200-7 which states: *A continuous white or natural gray covering on a conductor or a termination marking of white or natural gray color shall be used only for the grounded* (neutral) *conductor*. Exception No. 1 requires that if the white wire is used as an ungrounded (hot) conductor in applications such as a 240 volt circuit to a space heater or hot water tank, that it be permanently re-identified to indicate its use, by painting or other effective means at its termination and at each location where the conductor is visible and accessible. Exception No. 2 allows the white wire to supply single pole and three-way switches, without re-identification.

It should be noted that the 1998 NEC Committee Report on Proposals drops the last sentence of NEC 200-7 exception No. 2 and will require reidentification of white conductors when used as a switch loop.